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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/576,941

03/19/2007

Toshiki Taguchi

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65565 7590 09/14/2009  
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EXAMINER

KLEMANSKI, HELENE G

ART UNIT

PAPER NUMBER

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MAIL DATE

DELIVERY MODE

09/14/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/576,941	<b>Applicant(s)</b> TAGUCHI ET AL.	
	<b>Examiner</b> Helene Klemanski	<b>Art Unit</b> 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-19 is/are rejected.
- 7) ☒ Claim(s) 2 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/24/06 &amp; 4/1/09</u> .                                    | 6) <input type="checkbox"/> Other: ____.                          |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The references cited in the Search Reports dated January 25, 2005 and February 9, 2009 have considered.

### ***Claim Objections***

2. Claims 1, 12 and 13 are objected to because of the following informalities: in claim 1, line 1, the term "An" should be replaced with the term "A"; in claim 12, the formula (M1) is illegible; in claim 13, the formula (M2) is illegible and lastly in claim 13, the fifth line after formula (M2), the colon after the term "represents" should be deleted. Appropriate correction is required.

Applicants should note that the examiner used the formulas of (M1) and (M2) from the unamended claims filed April 24, 2006 in this Office Action since it did not appear that they were amended. In the amended claims filed April 24, 2006 the formulas of (M1) and (M2) are illegible. Please clarify.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 9, 13, 14 and 16-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 is considered confusing since it is dependent upon two different claims. The examiner suggests incorporating the dye of formula (B1) as defined in claim 6 into claim 9 to overcome this rejection.

In claim 13, the phrase "selected from" is considered indefinite since this is improper Markush language. It is the examiner's position that other materials could be present in the Markush group that were not intended by applicants by the use of the phrase "selected from" since this phrase does not exclude other materials. The examiner suggests the language "selected from the group consisting of" in place of this phrase. Applicants should note that there are three occurrences of the phrase "selected from" in this claim.

Claim 14 is considered confusing since it is dependent upon three different sets of claims. The examiner suggests incorporating the subject matter of claims 1, 4 and 10 into claim 14 to overcome this rejection.

Claim 16 is considered confusing since it is dependent upon three different sets of claims. The examiner suggests incorporating the formula (M1) as defined in claim 12 and the formula (M2) as defined in claim 13 into claim 16 to overcome this rejection.

Claim 17 is considered confusing since it is dependent upon two different claims. The examiner suggests incorporating the dye of formula (M1) as defined in claim 12 into claim 17 to overcome this rejection.

Claim 18 is considered confusing since it is dependent upon two different claims. The examiner suggests incorporating the dye of formula (M2) as defined in claim 13 into claim 18 to overcome this rejection.

Claim 19 is considered confusing since it is dependent upon three different sets of claims. The examiner suggests incorporating the formula (M1) as defined in claim 12 and the formula (M2) as defined in claim 13 into claim 19 to overcome this rejection.

### ***Double Patenting***

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 4-9 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6 and 8-11 of copending Application No. 11/582,962 (US 2007/0109376). Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the present application are generic to said copending claims and would be obvious thereby.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

In the above copending Application, it is the examiner's position that it would have been obvious to one having ordinary skill in the art that at least two dyes would have: (1) a half-value width of 100 nm or more in an absorption spectrum of a diluted solution, the absorption spectrum being standardized to have an absorbance of 1.0 at the  $\lambda_{\text{max}}$  and (2) an oxidation potential higher than 1.0 V versus SCE since the dyes having a  $\lambda_{\text{max}}$  of from 500 nm to 700 nm of the above copending Application are the same structure as those claimed by applicants.

7. Claims 4-9 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 3, 6 and 8-10 of U.S. Patent No. 7,303,272. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the present application overlap said patent claims and would be obvious thereby.

8. Claims 10 and 12 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2 and 5-7 of U.S. Patent No. 7,175,268. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the present application overlap said patent claims and would be obvious thereby.

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 4-9 are rejected under 35 U.S.C. 102(a) as being anticipated by WO 2004/029166 (US 7,303,272 is the English equivalent).

WO 2004/029166 teaches a black ink for ink-jet recording comprising an aqueous medium having dissolved or dispersed therein at least two dyes each having  $\lambda_{\text{max}}$  of the absorption spectrum in an aqueous solution in the region from 500 to 700 nm, a half-value width in the absorption spectrum of a dilute solution standardized to an absorbance of 1.0 is 100 nm or more and an oxidation potential more positive than 1.0 V versus SCE. The dyes are each represented by the Formula (1)

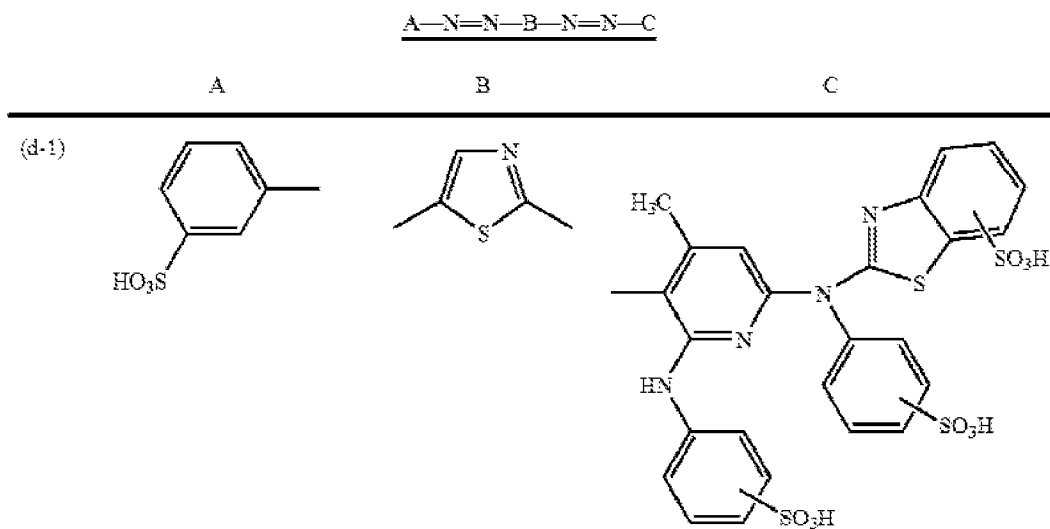
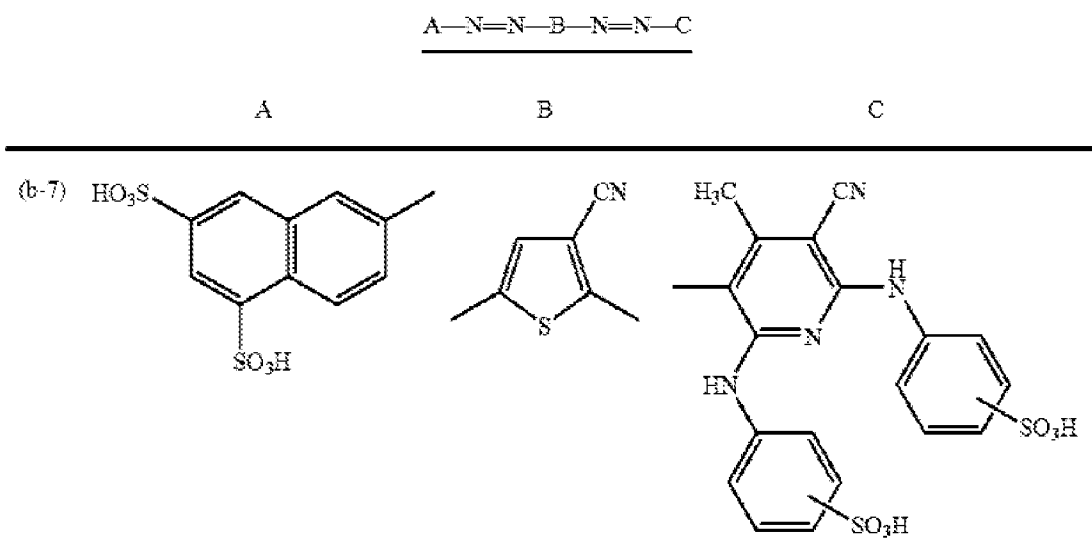


Formula (1)

wherein A, B and C each independently represents an aromatic or heterocyclic groups which may be substituted and m and n each represent 0 or an integer of 1 or more. The dyes of the above Formula (1) are present in the ink in an amount of 0.1-25 mass%

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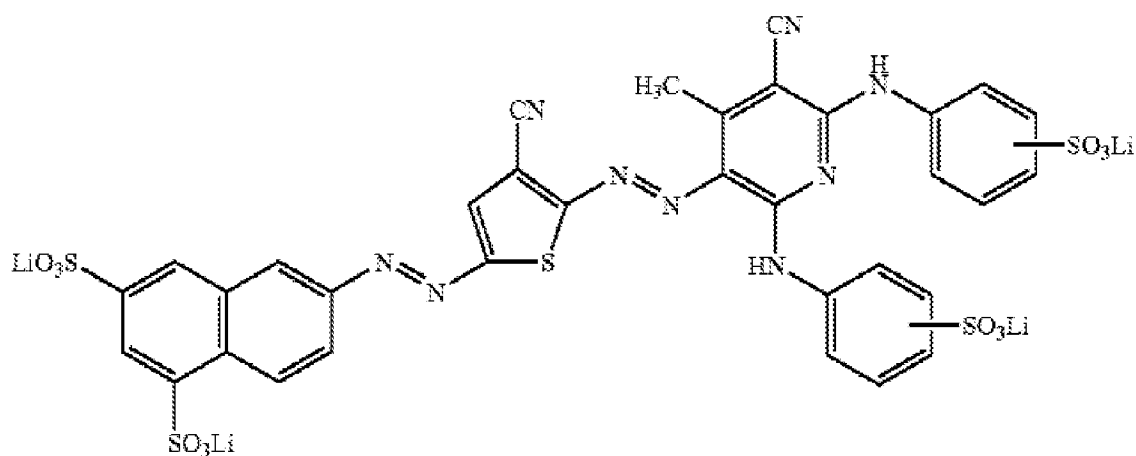
based on the entire ink. The black ink may further comprise at least one dye having  $\lambda_{\text{max}}$  of the region from 350 to 500 nm and wherein the dye is also represented by the above Formula (1). Specific examples of the dyes of Formula (1) having  $\lambda_{\text{max}}$  of the absorption spectrum in an aqueous solution is in the region from 500 to 700 nm include the following:





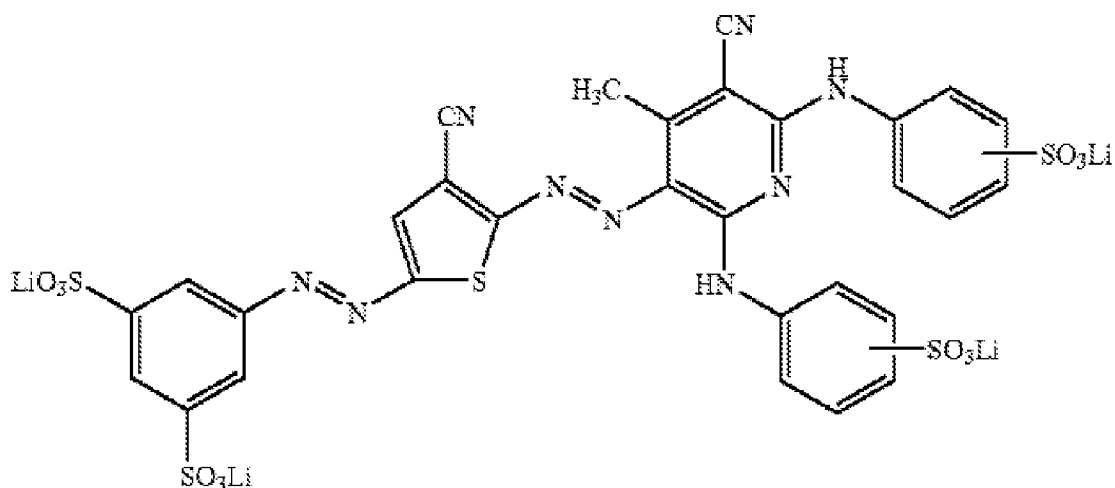
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BL-1:



and

BL-2:



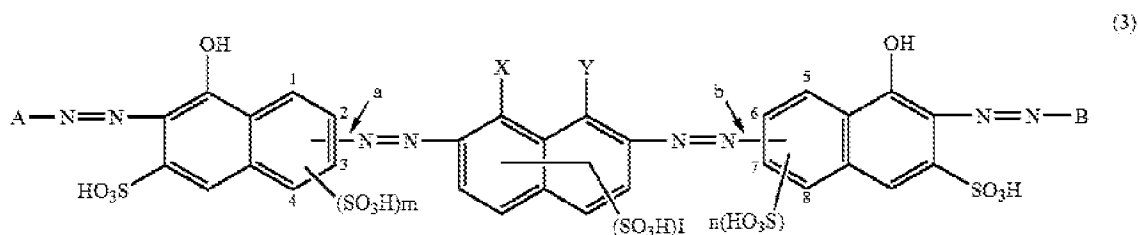
WO 2004/029166 further teaches an ink set comprising the above black ink and a process for printing comprising ejecting the above black ink composition onto a substrate. See col. 2, line 66 – col. 3, line 5, col. 3, lines 12-22 and lines 56-63, col. 4, lines 14-26 and lines 38-41, col. 5, line 53 – col. 6, line 2, col. 7, line 58 – col. 9, line 16, col. 15, line 27 - col. 16, line 2, the dyes in col. 18 to col. 31, col. 31, lines 40-46, col. 31, line 61 - col. 32, line 37, col. 51, lines 9-20, Bk-206 to Bk-210 in Table 5 and claims 1, 3,

6 and 810 of US 7,303,272. The black ink as taught by WO 2004/029166 appears to anticipate the present claims.

11. Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

12. Claims 4, 7 and 8 are rejected under 35 U.S.C. 102(a) as being anticipated by WO 2004/078860 (US 7,462,228 is the English equivalent).

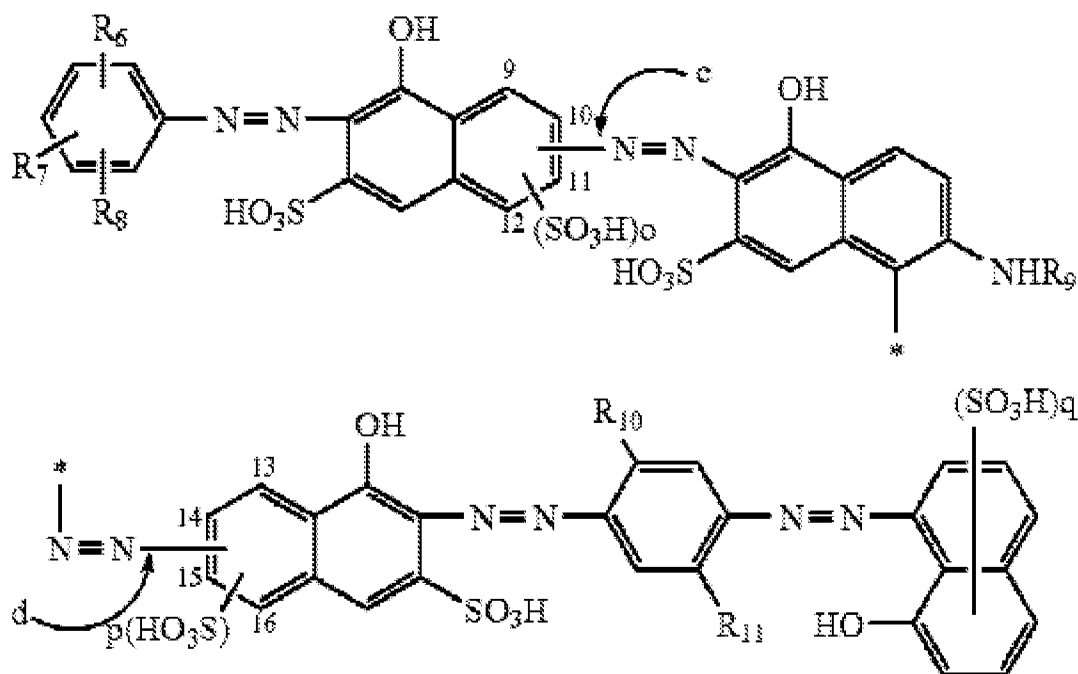
WO 2004/078860 teaches a water-based black ink for ink-jet recording comprising an azo dye of the Formula (3)



wherein each of A and B independently represents a phenyl group or a naphthyl group, which may be substituted, and each component of A and B contains at least one sulfo group; each of “a” and “b” represents a single bond, and bonded position of the “a” bond is the 2-position or 3-position, and bonded position of the “b” bond is at the 6-position or 7-position; one of X and Y represents a hydroxyl group and the other an amino group; I represents 1 or 2; each of m and n independently represents 0 or 1; and a counter ion of a sulfo group or a carboxyl group contained in the molecule is H, an alkali metal ion, a cation of an organic amine or an ammonium ion (i.e. corresponding to applicants formula (B2)); and an azo dye of the Formula (4)

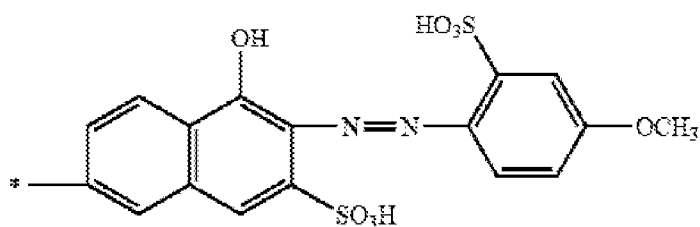
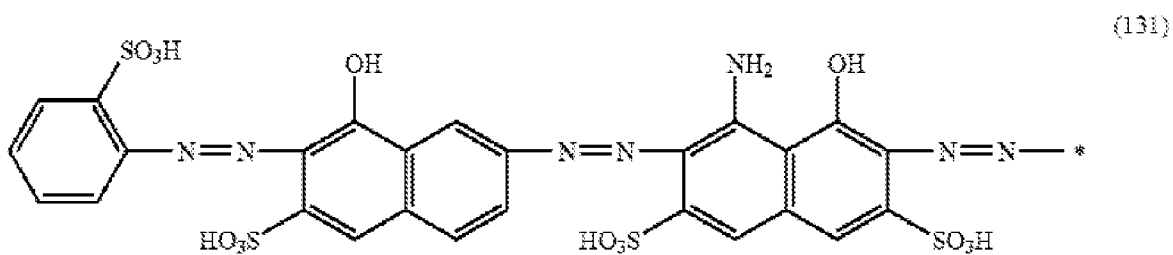
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(4)

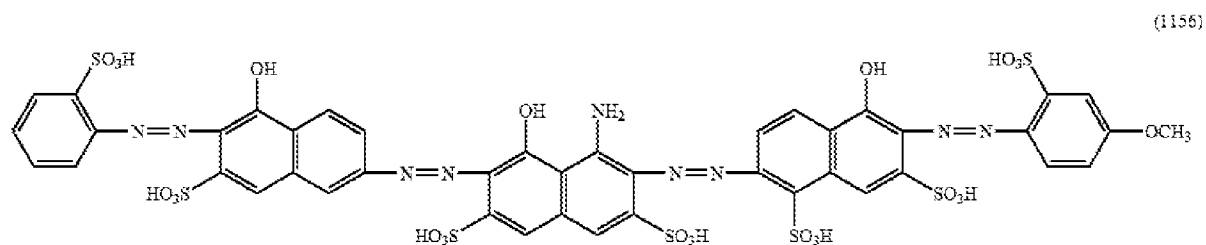


wherein  $R_6$  to  $R_{11}$  represent substituents; each of “c” and “d” represents a single bond, and bonded position of the “c” bond is the 10-position or 11-position, and bonded position of the “d” bond is at the 14-position or 15-position; o and p are 0 or 1; q is 1 or 2; and a counter ion of a sulfo group or a carboxyl group contained in the molecule is H, an alkali metal ion, a cation of an organic amine or an ammonium ion (i.e. corresponding to applicants formula (B2)) and wherein each of the azo dyes have the maximum absorption wavelength in the range from 550 to 700 nm in water. Specific examples of the azo dyes of Formula (3) are:

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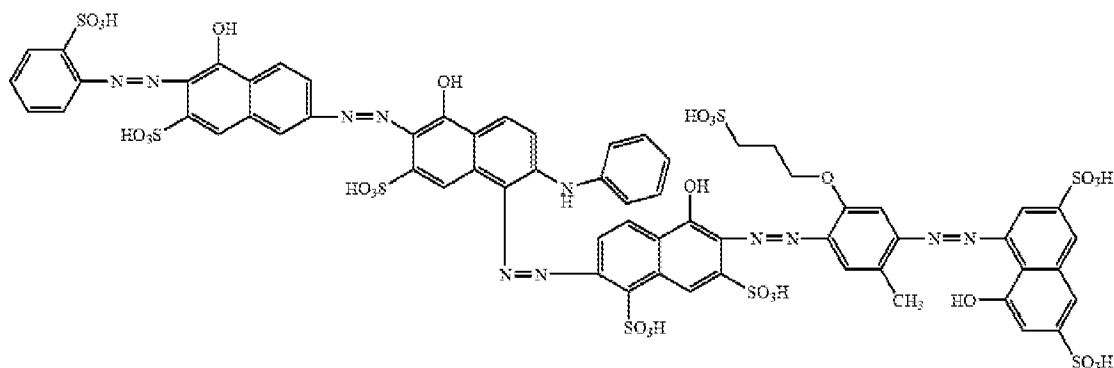


and



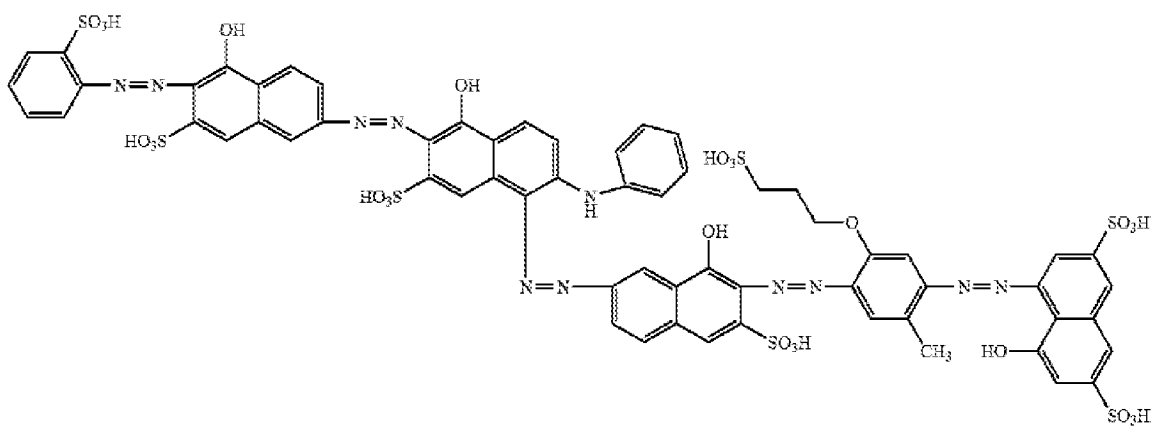
Specific examples of the azo dye of Formula (4) are:

(211)



and

(222)



WO 2004/078860 further teaches a process for printing comprising ejecting the above black ink composition onto a substrate. See col. 2, line 40 – col. 3, line 53, col. 4, lines 35-39, col. 7, lines 43-48, col. 12, lines 3-7 and lines 53-60, all the dyes in Tables 3-9, col. 50, lines 17-31, col. 52, line 63 - col. 53, line 2, col. 54, lines 53-67, Examples 1-3, 1-15, 2-1, 2-2, 3-1, 3-2 and 3-3 and claims 1, 3-7, 13 and 15 of US 7,462,228. The black ink as taught by WO 2004/078860 appears to anticipate the present claims.

The only limitations in the claims not found by the examiner are: (1) a half-value width of 100 nm or more in an absorption spectrum of a diluted solution, the absorption

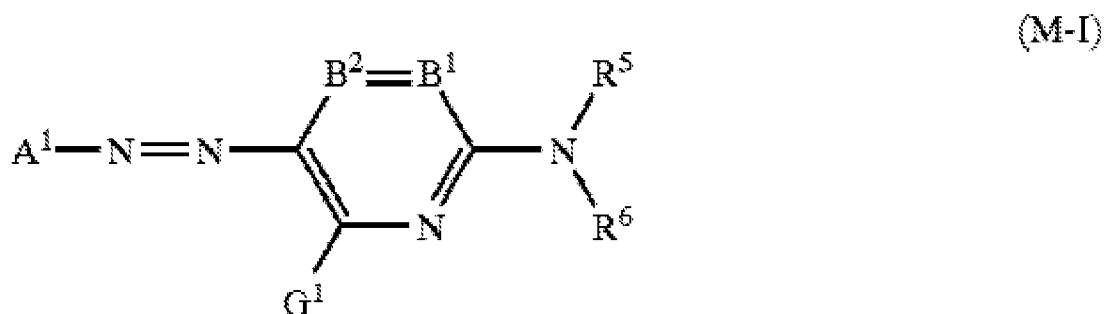
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spectrum being standardized to have an absorbance of 1.0 at the  $\lambda_{\text{max}}$  and (2) an oxidation potential higher than 1.0 V versus SCE. However, these limitations are considered inherent because there does not appear to be any reason why the cited reference would not contain dyes with applicants claimed half-value width and oxidation potential since the dyes having a  $\lambda_{\text{max}}$  of from 500 nm to 700 nm of the above reference are the same structure as those claimed by applicants.

13. Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

14. Claims 10, 12 and 15-17 are rejected under 35 U.S.C. 102(a) as being anticipated by Taguchi et al. (US 2004/0050291).

Taguchi et al. teach a magenta ink for ink jet recording comprising an azo dye having an oxidation potential higher than 1.1 V (vs SCE) of the formula (M-I)



wherein  $A^1$  represents a residue of a 5-membered heterocyclic diazo component  $A^1-NH_2$ ;  $B^1$  and  $B^2$  each represent a nitrogen atom,  $-CR^1=$  or  $-CR^2=$ , and when one of  $B^1$  and  $B^2$  represents a nitrogen atom and the other represents  $-CR^1=$  or  $-CR^2=$ ;  $R^5$  and  $R^6$

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each independently represent H or a substituted or unsubstituted aliphatic, aromatic, heterocyclic, acyl, alkoxycarbonyl, aryloxy carbonyl, carbamoyl, alkylsulfonyl, arylsulfonyl or sulfamoyl group and G, R<sup>1</sup> and R<sup>2</sup> each independently represent H, halogen, a substituted or unsubstituted aliphatic, aromatic, heterocyclic, cyano, carboxyl, carbamoyl, alkoxycarbonyl, aryloxy carbonyl, heterocyclic oxycarbonyl, acyl, hydroxy, alkoxy, aryloxy, heterocyclic oxy, silyoxy, acyloxy, carbamoyloxy, etc. group and R<sup>1</sup> and R<sup>5</sup>, or R<sup>5</sup> and R<sup>6</sup> may combine to form a 5- or 6-membered ring. Taguchi et al. also teaches that that magenta ink comprises two azo dyes of the above formula (M-I) wherein each of the dyes has a different structure. See specifically the magenta ink in ink set 104 in Table B containing azo dyes d-1 and e-4 and the magenta ink in the ink set 204 in Table F containing azo dyes d-3 and e-1. Taguchi et al. further teach an ink set comprising a light magenta ink and a magenta ink both comprising azo dyes of the above formula (M-I) wherein the light magenta ink comprises azo dyes of a different structure than the azo dyes contained in the magenta ink. See specifically the light magenta ink in ink set 104 in Table B containing azo dyes b-5 and c-3 and the light magenta ink in ink set 204 in Table F containing azo dyes b-3 and c-5 and the above magenta inks in ink sets 104 and 204. See paras. 0018-0019, para. 0022, paras. 0080-0085, paras. 0135-0140, the azo dyes in Tables 1-13, para. 0167, para. 0169, Ink Set 104 in Table B, Ink Set 204 in Table F and claims 1, 5 and 7. The magenta ink and ink set as taught by Taguchi et al. appears to anticipate the present claims.

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15. Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

16. Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 2003/221534.

JP 2003/221534 teaches a yellow ink composition comprising a dye having a  $\lambda_{\max}$  of from 390 nm to 470 nm and a ratio of  $I(\lambda_{\max} + 70 \text{ nm})$  to  $I \lambda_{\max}$  of 0.2 or less of the formula (Y-I)



wherein  $A^{11}$  and  $B^{11}$  each independently represents a heterocyclic group that may be substituted (i.e. dye of applicants formula (Y-I) wherein n is 1 and L is H). JP

2003/221534 further teach that the yellow ink comprises two azo dyes of the formula (Y-I) wherein each of the dyes has a different structure. See specifically Ink 107 in Table 20 containing dyes (Y1-17) and (Y1-5), Ink 108 in Table 20 containing dyes (Y2-1) and (Y3-5), Ink 207 in Table 24 containing dyes Y-3 and Y-7 and Ink 208 in Table 24 containing dyes Y-10 and Y-17. See paras. 0014-0015, paras. 0154-0157, The dyes on pages 47-65, the table on page 66, para, 0215, Inks 107 and 108 in Table 20 on page 77 and Inks 207 and 208 in Table 24 on page 81 of the machine translation (copy provided by the examiner). The yellow ink as taught by JP 2003/221534 appears to anticipate the present claims.

The only limitation in the claims not found by the examiner is an oxidation potential higher than 1.0 V versus SCE. However, this limitation is considered inherent

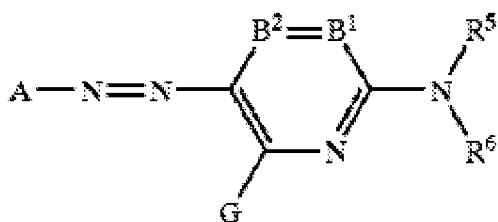


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because there does not appear to be any reason why the cited reference would not contain dyes with applicants claimed oxidation potential since the dyes having a  $\lambda_{\text{max}}$  of from 390 nm to 470 nm of the above reference are the same structure as those claimed by applicants.

17. Claims 10, 12 and 15-17 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 03/068872 (US 7,175,268 is the English equivalent).

WO 03/068872 teaches a magenta ink jet recording ink comprising at least two azo dyes sharing one spectral absorption region of 500 to 580 nm and each having an oxidation potential greater than 0.7 V (vs SCE). The azo dyes are of the formula (I)



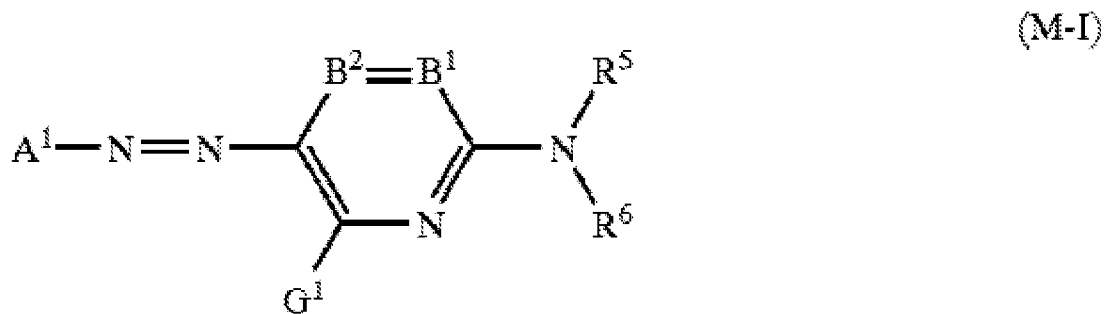
wherein A represents a residue of a 5-membered heterocyclic group;  $B^1$  and  $B^2$  each represent  $-CR^1=$  or  $-CR^2=$ , or one of  $B^1$  and  $B^2$  represents a nitrogen atom and the other represents  $-CR^1=$  or  $-CR^2=$ ;  $R^5$  and  $R^6$  each independently represent H or a substituted or unsubstituted aliphatic, aromatic, heterocyclic, acyl, alkoxycarbonyl, aryloxy, carbamoyl, alkylsulfonyl, arylsulfonyl or sulfamoyl group and G,  $R^1$  and  $R^2$  each independently represent H, halogen, a substituted or unsubstituted aliphatic, aromatic, heterocyclic, cyano, carboxyl, carbamoyl, alkoxycarbonyl, aryloxy, heterocyclic oxycarbonyl, acyl, hydroxy, alkoxy, aryloxy, heterocyclic oxy, silyoxy, acyloxy, carbamoyloxy, etc. group and  $R^1$  and  $R^5$ , or  $R^5$  and  $R^6$  may combine to form a

5- or 6-membered ring. WO 03/068872 also teaches that that magenta ink comprises two azo dyes of the above formula (I) wherein each of the dyes has a different structure. See specifically the magenta ink in ink set No. 6 in Table A containing azo dyes a-36 and a-15 and the magenta ink in the ink set No. 7 in Table A containing azo dyes a-36 and a-15. WO 03/068872 further teach an ink set comprising a light magenta ink and a magenta ink both comprising azo dyes of the above formula (I) wherein the light magenta ink comprises azo dyes of a different structure than the azo dyes contained in the magenta ink. See specifically the light magenta ink in ink set No. 10 in Table G containing azo dye a-36 and the magenta ink in ink set No. 10 in Table G containing azo dye a-15. See col. 2, lines 50-61, col. 3, lines 9-67, col. 6, lines 20-21 and lines 47-55, col. 7, lines 22-25, col. 7, line 49 – col. 8, line 28, the azo dyes in col. 17-col. 44, col. 45, lines 1-27 and lines 45-55, Table A; No's. 6 and 7; Table G; No's. 4-6 and 10 and claims 1, 2 and 5-7 of US 7,175,268. The magenta ink and ink set as taught by WO 03/068872 appears to anticipate the present claims.

18. Claims 10, 12 and 15-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Taguchi et al. (US 7,083,668)

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Taguchi et al. teach a magenta ink for ink jet recording comprising an azo dye having an oxidation potential higher than 1.1 V (vs SCE) of the formula (M-I)



wherein  $A^1$  represents a residue of a 5-membered heterocyclic diazo component  $A^1-NH_2$ ;  $B^1$  and  $B^2$  each represent a nitrogen atom,  $-CR^1=$  or  $-CR^2=$ , and when one of  $B^1$  and  $B^2$  represents a nitrogen atom and the other represents  $-CR^1=$  or  $-CR^2=$ ;  $R^5$  and  $R^6$  each independently represent H or a substituted or unsubstituted aliphatic, aromatic, heterocyclic, acyl, alkoxycarbonyl, aryloxy, carbamoyl, alkylsulfonyl, arylsulfonyl or sulfamoyl group and  $G$ ,  $R^1$  and  $R^2$  each independently represent H, halogen, a substituted or unsubstituted aliphatic, aromatic, heterocyclic, cyano, carboxyl, carbamoyl, alkoxycarbonyl, aryloxy, heterocyclic oxycarbonyl, acyl, hydroxy, alkoxy, aryloxy, heterocyclic oxy, silyoxy, acyloxy, carbamoyloxy, etc. group and  $R^1$  and  $R^5$ , or  $R^5$  and  $R^6$  may combine to form a 5- or 6-membered ring. Taguchi et al. also teaches that that magenta ink comprises two azo dyes of the above formula (M-I) wherein each of the dyes has a different structure. See specifically the magenta ink in ink set 104 in Table B containing azo dyes d-1 and e-4 and the magenta ink in the ink set 204 in Table F containing azo dyes d-3 and e-1. Taguchi et al. further teach an ink

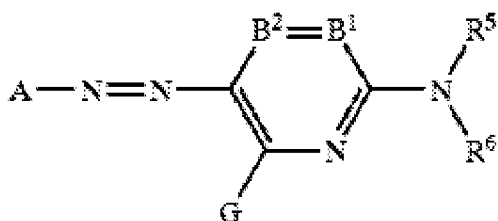
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set comprising a light magenta ink and a magenta ink both comprising azo dyes of the above formula (M-I) wherein the light magenta ink comprises azo dyes of a different structure than the azo dyes contained in the magenta ink. See specifically the light magenta ink in ink set 104 in Table B containing azo dyes b-5 and c-3 and the light magenta ink in ink set 204 in Table F containing azo dyes b-3 and c-5 and the above magenta inks in ink sets 104 and 204. See col. 3, lines 3-41, col. 23, line 40 – col. 24, line 10, col. 30, line 19 – col. 31, line 23, the azo dyes in Tables 1-13, col. 63, lines 35-48, col. 64, lines 39-40, col. 110, lines 7-13, Ink Set 104 in Table B, Ink Set 204 in Table F and claims 1, 4 and 6. The magenta ink and ink set as taught by Taguchi et al. appears to anticipate the present claims.

19. Claims 10-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Hanmura et al. (US 7,323,045).

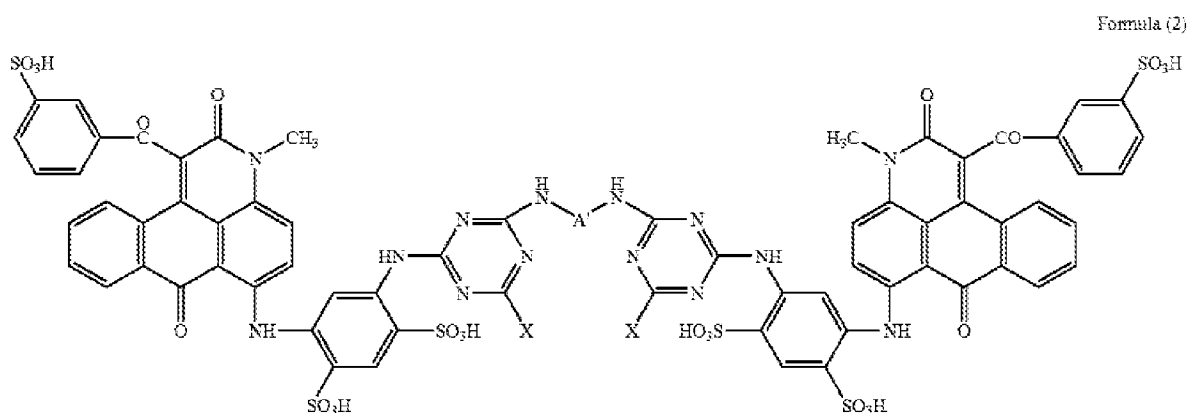
Hanmura et al. teach a magenta ink composition including both a light magenta ink composition and a dark magenta ink composition for inkjet recording, each ink comprising, as colorants, an azo dye of the formula (1) and an anthrapyridone dye of the formula (2):

formula (1)

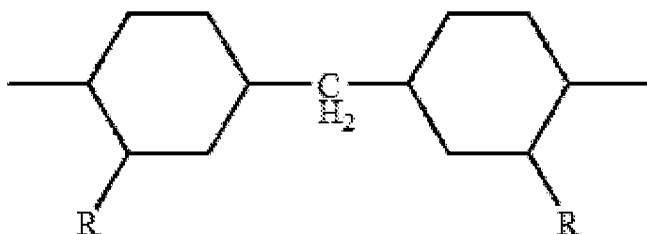


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wherein A represents a residue of a 5-membered heterocyclic diazo component A-NH<sub>2</sub>;  
 B<sup>1</sup> and B<sup>2</sup> each represent -CR<sup>1</sup>= or -CR<sup>2</sup>=, or one of B<sup>1</sup> and B<sup>2</sup> represents a nitrogen atom and the other represents -CR<sup>1</sup>= or -CR<sup>2</sup>=; R<sup>5</sup> and R<sup>6</sup> each independently represent H or a substituted or unsubstituted aliphatic, aromatic, heterocyclic, acyl, alkoxycarbonyl, aryloxycarbonyl, carbamoyl, alkylsulfonyl, arylsulfonyl or sulfamoyl group and G, R<sup>1</sup> and R<sup>2</sup> each independently represent H, halogen, a substituted or unsubstituted aliphatic, aromatic, heterocyclic, cyano, carboxyl, carbamoyl, alkoxycarbonyl, aryloxycarbonyl, heterocyclic oxycarbonyl, acyl, hydroxy, alkoxy, aryloxy, heterocyclic oxy, silyoxy, acyloxy, carbamoyloxy, etc. group and R<sup>1</sup> and R<sup>5</sup>, or R<sup>5</sup> and R<sup>6</sup> may combine to form a 5- or 6-membered ring;



wherein A<sup>1</sup> represents an alkylene group, a phenylene group-containing an alkylene group or



wherein R represents H or an alkyl group and X represents NH<sub>2</sub>, OH or Cl. See col. 2, line 37 – col. 3, line 60, col. 5, lines 1-45, col. 6, lines 36-38 and lines 51-53, col. 7, lines 8-27, the azo dyes in Tables 1-6, Table 7; examples 1-15, Table 8; examples 1-9 and claims 1, 3 and 4. The magenta ink as taught by Hanmura et al. appears to anticipate the present claims.

The only limitation in the claims not found by the examiner is an oxidation potential higher than 1.0 V versus SCE. However, this limitation is considered inherent because there does not appear to be any reason why the cited reference would not contain dyes with applicants claimed oxidation potential since the of the above reference are the same structure as those claimed by applicants.

20. Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

### ***Claim Rejections - 35 USC § 103***

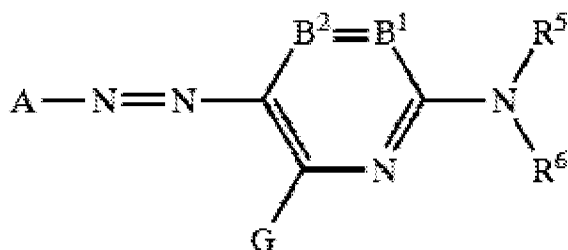
21. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

22. Claims 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2003/231835 in view of JP 2003/192930.

JP2003/231835 teaches a magenta ink jet ink composition comprising an aqueous medium and a magenta dye of the formula



wherein A represents a 5-membered heterocyclic radical; B<sup>1</sup> and B<sup>2</sup> represent =CR<sup>1</sup>- and -CR<sup>2</sup>= respectively or one represents a nitrogen atom and the other represents =CR<sup>1</sup>- or -CR<sup>2</sup>=; R<sup>5</sup> and R<sup>6</sup> each independently represents H, an aliphatic group, an aromatic group, a heterocyclic group, an acyl group, an alkoxycarbonyl group, an aryloxy carbonyl group, a carbamoyl group, an alkylsulfonyl group, an arylsulfonyl group or a sulfamoyl, each group being optionally substituted; G, R<sup>1</sup> and R<sup>2</sup> each independently represents H, a halogen atom, an aliphatic group, an aromatic group, a heterocyclic group, a cyano group, a carboxyl group, a carbamoyl group, an alkoxycarbonyl group, an aryloxy carbonyl group, an acyl group, a hydroxy group, an alkoxy group, an aryloxy group, etc. and R<sup>1</sup> and R<sup>5</sup> or R<sup>5</sup> and R<sup>6</sup> may be bonded

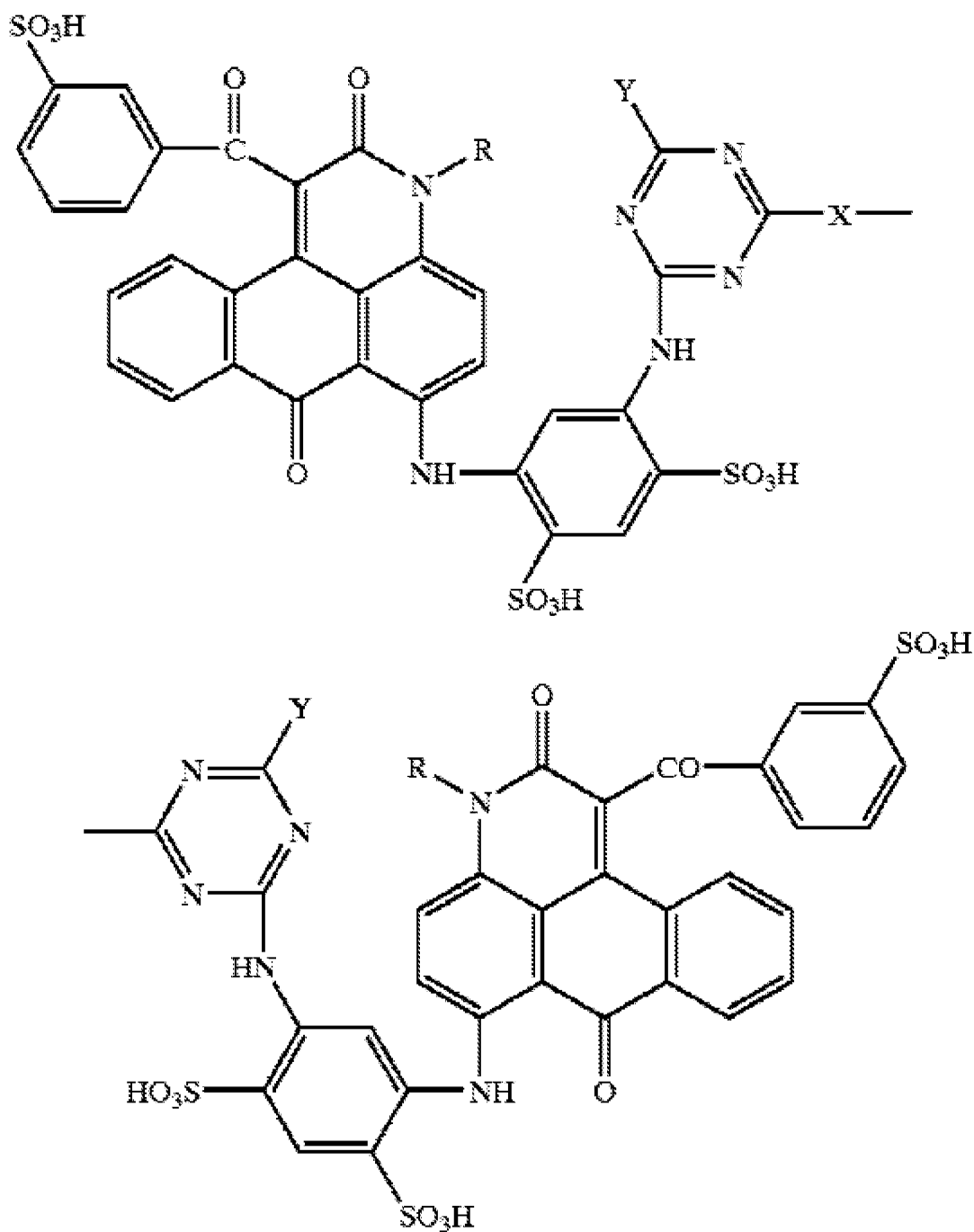
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together to form a 5- or 6-membered ring. The above magenta dye may also be combined with other magenta dyes such as anthrapyridone dyes. JP2003/231835 further teaches a process for printing comprising ejecting the above ink jet ink composition onto a substrate. See paras. 0006-0008, para. 0012, Tables 1-13, para. 0068, para. 0071 and claim 1 of the English translation (copy provided by the examiner). JP2003/231835 fails to specifically exemplify the addition of an anthrapyridone dye as claimed by applicants.

JP2003/192930 teaches a magenta ink jet ink composition comprising a magenta anthrapyridone magenta dye of the formula

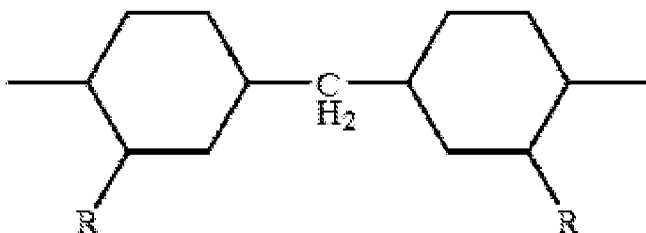


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wherein R is an alkyl group; Y is chlorine, a hydroxyl group or  $\text{NH}_2$  and X is a bridging group such as an alkylene group, a phenylene group-containing an alkylene group or a group of the formula

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wherein R represents H or an alkyl group. JP2003/192930 further teaches a process for printing comprising ejecting the above ink jet ink composition onto a substrate. See paras. 0007-0008 and claims 1-4 of the English translation (copy provided by the examiner).

Therefore, it would have been obvious to one having ordinary skill in the art to use the specific anthrapyridone dye of JP2003/192930 as claimed by applicants as JP2003/231835 also discloses the use of these magenta dyes but fails to show an example incorporating them.

### ***Allowable Subject Matter***

23. Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

24. The following is a statement of reasons for the indication of allowable subject matter: JP 2003/221534 fails to teach or fairly suggest a yellow ink wherein at least one of the at least two dyes is a dye represented by the formula (Y2) or (Y3):



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wherein P represents an aryl group that may be substituted and Q represents a heterocyclic group that may be substituted;



wherein X and Y each represents an aryl group that may be substituted as claimed by applicants.

25. Claim 14 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

26. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to teach or fairly suggest an ink set for inkjet recording comprising at least one yellow ink as claimed by applicants in claim 1, a black ink as claimed by applicants in claim 4, and a magenta ink as claimed by applicants in claim 10.

### ***Conclusion***

The remaining references listed on forms 892 and 1449 have been reviewed by the examiner and are considered to be cumulative to or less material than the prior art references relied upon in the above rejections.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helene Klemanski whose telephone number is (571) 272-1370. The examiner can normally be reached on Monday-Friday 7:00-3:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Helene Klemanski/  
Primary Examiner, Art Unit 1793